

## **REMARKS**

In response to the above-identified Office Action (“Action”), Applicant traverses the Examiner’s rejection of the claims and seeks reconsideration thereof. Claims 1-14 are pending in the present application. Claims 1-14 are rejected. In this response, claims 1-14 are amended, no claims are cancelled and no claims are added.

### **I. Amendments**

Applicant respectfully submits herewith amendments to claims 1-14. Claim 1 is amended to clarify that the electric wire is within a tube and the ceramic sheath is interposed between the wire and the tube. Support for the amendments to claim 1 may be found, for example, on page 4 lines 25-33 and Figure 2 of the Application. Claims 1-14 are further amended to delete the reference numbers recited in the claims. Thus, the amendments are supported by the specification and do not add new matter. Applicant respectfully requests consideration and entry of the amendments to claim 1.

### **II. Claim Rejections - 35 U.S.C. §103**

In the outstanding Action, claims 1-3 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,234,786 issued to Borom et al. (“Borom”) in view of U.S. Patent No. 4,934,831 issued to Volbrecht (“Volbrecht”) and further in view of U.S. Patent No. 6,880,969 issued to Adachi et al. (“Adachi”). Applicant respectfully traverses the rejection.

To establish a *prima facie* case of obviousness, the Examiner must set forth “some articulated reasoning with some rational underpinning to support the conclusion of obviousness.” See KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1396 (2007). In combining prior art elements to render the claimed combination of elements obvious, the Examiner must show that the results would have been predictable to one of ordinary skill in the art. See Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103, Section III(D), issued by the U.S. Patent and Trademark Office on October 10, 2007.

In regard to independent claim 1, Applicant respectfully submits Borom, Volbrecht and Adachi fail to disclose or render predictable at least the elements of “a ceramic sheath surrounding the wire and interposed between the wire and the tube; wherein the sheath includes a woven layer” as recited in claim 1.

Borom relates to a tubular heating element that includes a metal jacket and a coaxial coil resistor enclosed in the jacket. Borom further discloses an insulating material filling the space between the resistor and the jacket. As recognized by the Examiner, however, Borom does not disclose or render predictable use of a complementary ceramic sheath that surrounds the wire and which includes a woven layer as claimed.

Further, the device of Borom differs structurally from the claimed device in such a way that the person skilled in the art would not understand to modify Borom to arrive at the combination of elements recited in claim 1. First, Borom discloses the use of a single wire. Thus, one of ordinary skill in the art would not understand any reason to use insulation between wires. In addition, the device of Borom would be difficult to integrate in a sensor as Borom needs an electrical junction at both extremity of the heating element. Finally, the device of Borom may not be brazed on a metallic body of a sensor.

As disclosed on page 7 lines 14-17 of the Application, the woven sheath used in the heater resistance of the claims serves to avoid dielectric breakdown that may occur between the wires and the external protection tube (18) while the resistance is being deformed in order to be shaped and installed. Thus, the heater resistance of the instant Application has the advantage of withstanding large amounts of deformation without degrading the heating properties of the resistance.

As discussed in Applicant’s previous response, Volbrecht and Adachi both relate to temperature sensors for measuring temperature and not to heating resistance. Accordingly, a person skilled in the art would not understand features of these documents to improve the resistance of Borom.

Moreover, Volbrecht does not suggest using a woven ceramic sheath in addition to a surrounding tube. Rather, in Volbrecht, the metal tube (22) and the woven stainless steel mesh

(32) are used separately in different portion of the probe for the same purpose, which is to increase the durability of the assembly. This woven stainless steel mesh is used externally (and not internally as in the claimed heater resistance) and cannot ensure the electrical insulation as it is made of steel.

Thus, one of ordinary skill in the art would not understand combining the teaching of Volbrecht with the teaching of Borom as alleged by the Examiner to lead to the results achieved by the claimed combination of elements. In particular, a resistance having a woven ceramic sheath surrounding the wire and interposed between the wire and the tube as claimed.

Adachi may further not be relied upon to cure the deficiencies of Borom with respect to the element of a woven sheath. To avoid dielectric breakdown that may occur between wires of the probe, Adachi proposes a completely different solution that consists in interposing a holding member between the wires. See Adachi, col. 1 lines 39-46. Therefore, combining the teaching of Adachi with the teaching of Borom would not lead one of ordinary skill in the art to the claimed combination of elements.

Thus, for at least the foregoing reasons, the combination of Borom, Volbrecht and Adachi, fails to disclose or render predictable a woven ceramic sheath surrounding the wire and interposed between the wire and the tube. Further none of these documents mention that the disclosed devices are applicable as a heating element for icing and de-icing function of a probe dedicated for physical characteristic measurement. In addition none of these documents refers to a swaging or stretching process for manufacturing of the heating element. The claimed device has a design that enables a manufacturing method guaranteeing a high level of performances in a very small diameter for the heating cable.

Since each and every element of claim 1 is not disclosed or rendered predictable in view of the cited prior art references, a *prima facie* case of obviousness may not be established. Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §103 over Borom, Volbrecht and Adachi.

Claims 2, 3 and 13 depend from claim 1 and incorporate the limitations thereof. Thus, for at least the reasons that claim 1 is not obvious over Borom, Volbrecht and Adachi, claims 2, 3

and 13 are further not obvious over the cited prior art references. Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 2, 3 and 13 under 35 U.S.C. §103 over Borom, Volbrecht and Adachi.

### **III. Claims 4-12 and 14**

In regard to claims 4-12 and 14, the Examiner indicates in the “Office Action Summary” that these claims are rejected, however, fails to provide any basis for rejecting the claims in the “Detailed Action.” Accordingly, Applicant respectfully requests that if the Examiner chooses to maintain the rejection on this basis, the Examiner provide reasons for rejecting the claims in the next Office Action. Applicant further requests that the next Office Action be made non-final so that Applicant has an adequate opportunity to respond to the rejection of claims 4-12 and 14 prior to appeal.

### **CONCLUSION**

In view of the foregoing, it is believed that all claims now pending, namely claims 1-14, are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

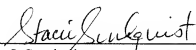
### **PETITION FOR EXTENSION OF TIME**

Per 37 C.F.R. 1.136(a) and in connection with the Office Action mailed on OCTOBER 31, 2007, Applicant respectfully petitions Commissioner for a one (1) month extension of time, extending the period for response to FEBRUARY 29, 2008. The amount of \$120.00 to cover the petition filing fee for a 37 C.F.R. 1.17(a)(1) large entity will be charged to our Deposit Account No. 02-2666.

Respectfully submitted,

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Dated: February 20, 2008

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#### **CERTIFICATE OF TRANSMISSION**

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on February 20, 2008.

  
Si Vuong